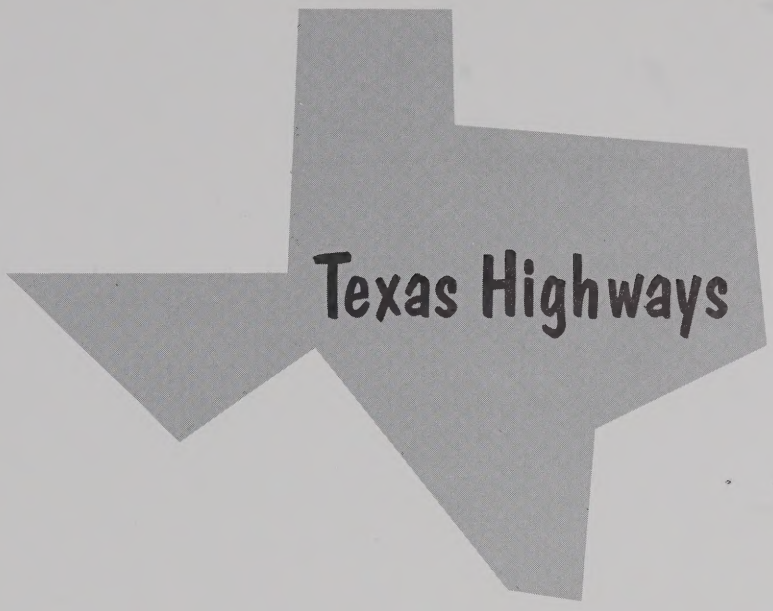
Texas Highways

January 1968

Sunset in the Big Country—Broken hills frame vehicles traveling along US 90 between Sanderson and Comstock near the Rio Grande. Hugh Pillsbury took the picture.



CONTENTS

Editorial 2
TTI: Research in All Directions 3
These Changing Times 12
First Gilchrist, Greer Awards Presented 16
A Glance Back and A Long Look Down the Road . . 18
In the Public Eye 21
Travel Handbook Expanded 22
Three Texas Highways Set Record 22
Flooding Repair Contracts Let 23
Junkyard Sculptor 24
District 12 Employees Honored 27
A 'Vital' Part of Education 28
To and From Our Readers 30
Over the Highways 32

January 1968
Volume 15 • Number 1

About Our Cover

The New Year ushered in freezing rain, sleet, and snow in most parts of northern Texas, Central Texas escaped the snow, but several years ago, it, too, was carpeted in white, providing a picturesque cover to herald winter's arrival. The photo was taken on FM 620 west of Austin.

Keystone to Success

The following editorial appeared in RESEARCH NOTES, a publication of District 12, Houston.

Of the many qualities that are necessary for our successful endeavors, one of the most important is perseverance.

It has been said the road to Hell is paved with good intentions. We suspect that instead of a mere road that there are enough of our good intentions and ideas lost to pave a freeway or two.

One dictionary defines perseverance as, "To persist in a state, enterprise, or undertaking in spite of counter influences, opposition, or discouragement."

The chronicle of pure research is the story of success after, in some cases, thousands of failures. Regardless of what other attributes those conducting research possess, perseverance was the keystone to success.

Most wives seemingly have this quality to an uncommon degree, although, in this case, we might call it stubbornness. Whatever we call it, they seem to have the knack of persistance to hold out until their husbands have completed the task that needs to be done.

It is not known whether a person is born with the quality of perseverance or whether it is acquired later, but it is known that perseverance can be developed successfully. It is not only a desirable trait, but it is absolutely necessary for successful participation in today's society.

Employees are rated by their supervisors as to whether they have the patience or backbone to complete a job assignment. A supervisor who assigns a task to an employee expects him to complete it. It is to be expected that the employee who demonstrates little tenacity or none at all will soon be replaced.

When was the last time we failed to complete a project because we felt that there were too many interferences, or that we just didn't have enough time?

TTI: Reseach in ALL Directions

By TOMMIE PINKARD
Travel and Information Division

"Behold the turtle
He only makes progress
When his neck is stuck out."

Earl Rudder, president of Texas A&M University, said at the Forty-First Annual Highway Short Course in November, "We feel that the Texas Transportation Institute, with the help of the Texas Highway Department, is an agency of the first order. The Institute has created national and international interest with its research projects, such as the breakaway sign supports and light standards."

On the wall behind Director Charles J. Keese's desk at the Texas Transportation Institute, there is amid the plaques and diplomas a simple cartoon of a turtle "who only makes progress when his neck is stuck out."

If this turtle could travel in several directions at once, he might serve admirably as a mascot for TTI, research arm of the Texas Highway Department at Texas A&M in College Station. At TTI, more than 130 researchers, technicians, and student assistants advance the body of knowledge in the field of transportation by sticking out "necks" of research in many directions — highway design and construction, traffic studies, transportation economics and right of way, materials, pavement structure design, for example.

"Our program is unique in one respect," says Director Keese. "It was designed and has worked since its beginning as a cooperative program between A&M and the Texas Highway Department. There is a very close tie in with Highway Department personnel who participate in the program, and that goes a long way toward bridging the gap between research and implementation. It has brought about a mutual respect and understanding between research and operating personnel. "

The program is designed to be responsive to all phases of highway engineering, and to get the results to the highway engineer as quickly as possible. When the researcher and the engineer work together closely, research is not difficult to implement. "It's hard to read long technical reports if you're not familiar with the research," says Keese.

In a close working relationship the researcher has respect for the problems and needs of the engineer. "The researcher benefits because he keeps one foot firmly planted on the ground — not both in the clouds," is the way Keese expresses it.

Highway Department engineers thus have the opportunity to stay abreast of the latest technology in their fields of specialization, and can take part in the advancements by observing and even participating in experiments at TTI.

"The other unique aspect of our program is its interdisciplinary nature," adds Keese. "Highway problems are so complex now that you have to bring in disciplines not formally related to the highway field."

In addition to research engineers in highway design, materials and traffic, TTI has on its staff geologists, chemists, economists, soils and vegetation specialists. On call from the teaching staff at A&M are representatives of many other specialties: psychology, even epidemiology, for example.

Founders of TTI were Mr. Thomas H. MacDonald, former U. S. Commissioner, Bureau of Public Roads (affectionately known as the "Father of American Highways" because of his leadership during the formative years of the BPR); Gibb Gilchrist, former state highway engineer and chancellor of A&M when TTI was formed; Dean Fred J. Benson of A&M, the first executive officer of TTI; and D. C. Greer, then state highway engineer.

Negotiations started in 1948, and in 1949, legislation made possible cooperative research between A&M and the Highway Department. The administrative order establishing TTI is dated September 1, 1955, and active research was under way that month.

Director Keese describes the aims of TTI in this manner: "We are so far behind in finding answers to problems of providing mobility for today's society that we must find answers to today's problems now, build a foundation for tomorrow's research, and disseminate the findings of all research in a manner that will encourage implementation. As rapidly as technology is advancing, most research today has little inventory value. It must be put to work in either practice or in other research as a step in technological advancement."

Keese cites two instances of putting into practice the results of research and thereby verifying research findings in the complete real-world environment:

At the entrance to the Texas Transportation Institute at Texas A&M, Director Charles (Jack) Keese, center, talks with Major General John P. Doyle, McDonald Professor of Transportation at A&M, left; and Dr. Charley V. Wootan, assistant director of TTI.

One much-publicized example is the breakaway sign. After a design was developed and tested at TTI by researchers and Highway Department engineers, breakaway supports were installed on highways on an experimental basis and information gained through field experience was fed back to the experimenters. Lives were saved while the research was being proved. Twelve state highway departments joined in sponsoring the project, and the scope of the research broadened to include impact attenuation devices, wind loading studies and development of sign backgrounds with reduced wind resistance.

For the past ten years cooperative research in freeway operation has been under way. Answers have been fed back into freeway design and operation often before the research reports were published. During one experiment to validate theories of ramp control, ramp signals on the Gulf Freeway were controlled manually. Operation of the freeway was improved to such an extent that it was considered unwise to forego the manually controlled system while automatic controllers were being developed.

At the same time, research has continued. One ramp has been controlled by an automatic device which has undergone several modifications. Research has now reached the point

where automatic ramp controllers have been ordered for all freeway ramps and these will also be evaluated through practical application.

Keese also defines TTI as a public service organization, with responsibilities to the University as well as to the Highway Department. "What we learn we want to take into the classroom and use to benefit the state." In its close association with Texas A&M, researchers are also active professors, and many of its technicians are graduate students.

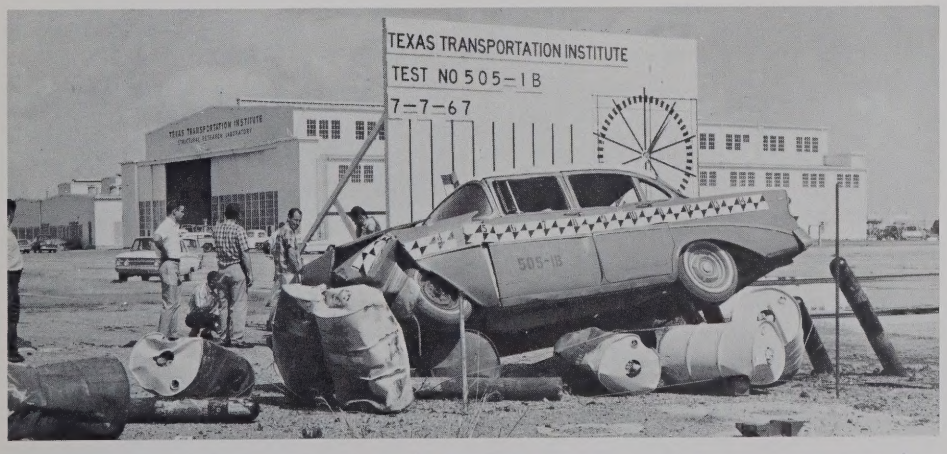
He adds, "We use as many students as we can in our research, both graduate and undergraduate. The younger generation keeps us young, and out of a rigid frame of mind."

TTI is primarily involved in highway transportation, because that field is the only one that is concerned with public service in the public domain. "Others are competitive," says Keese, "within the modes as well as between the modes, such as rail versus airlines.

"However, we do hope the Department of Transportation will have some funds available for generalized research in other modes of transportation, in the economic area, for example."

Although the overwhelming majority of the research is sponsored by the Texas Highway Department, TTI does have projects for other organizations, government agencies, and industrial associations. But even in these projects, there is feedback to Texas highways. For instance, TTI is conducting a study of traffic control of the John C. Lodge Freeway in Detroit, under the sponsorship of the National Academy of Sciences.

In Director Keese's office, a conference over coffee cups: From left, Mc Shelby, research engineer, Pavement Design Department; Jack Keese, and Charley Wootan.



Impact attenuation device, consisting of barrels filled with beverage cans (far left), awaits impact from test car traveling 60 mph (left). When dust settled, car was riding high, but a driver would be alive.

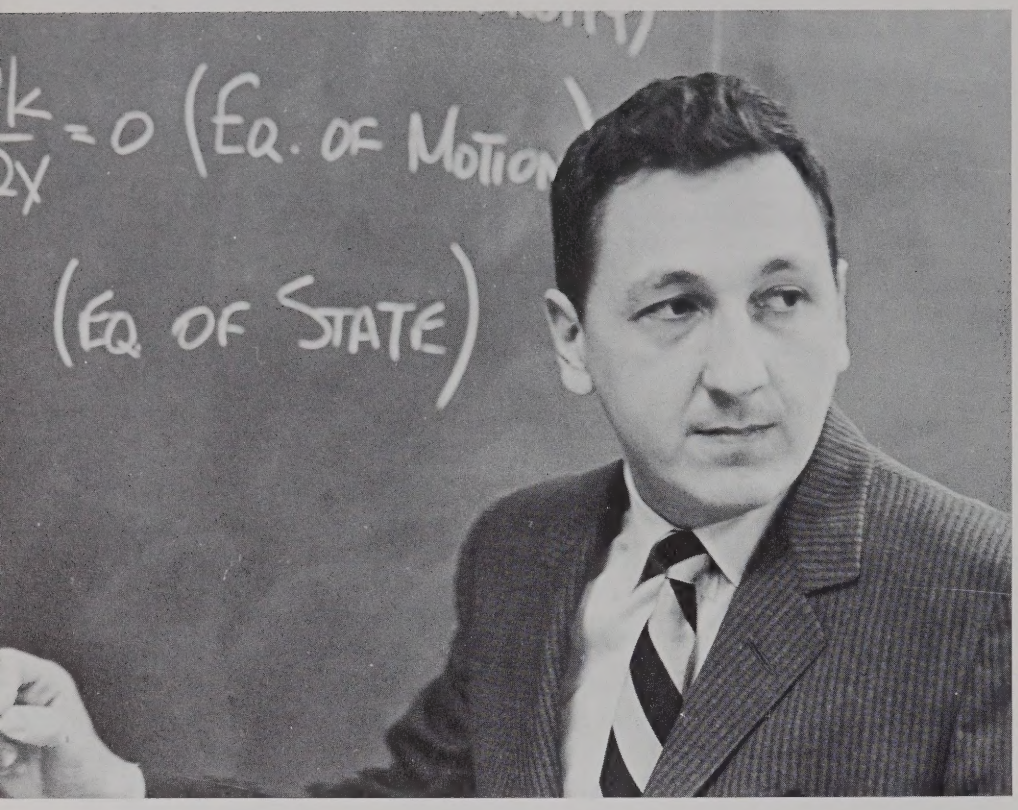
"We wanted a chance to try out theories that worked in Houston on the Gulf Freeway," said Dr. Donald R. Drew, head of the Design and Traffic Division of TTI. "Some of the things we have learned in Detroit are already being applied in Houston."

A brief look at some of the divisions and projects now under way at TTI will give an idea of the scope of the research.

A key man transcending all barriers of divisions and departments at TTI is Frederick S. White, head of library facilities.

"My job is to make sure our engineers don't re-invent the wheel," he comments.

"Our work is service to people at TTI and in the field. All research studies at TTI begin with a complete search of the known technology, so we won't go over ground already covered and to find out if there is a foundation for the next block in the pyramid of technology."



TTI researchers also teach: Dr. Donald R. Drew, head of Design and Traffic Division, left; and Dr. Joseph A. Wattleworth, head of Traffic Systems Department of Design and Traffic Division.

White also helps districts of the Highway Department find information on specific problems. "Right now we are making eight separate searches for the Houston District — on salt water effects on concrete, for example. As we locate material, we annotate it and give the engineers a list of pertinent publications. If we know a district has a specific problem, we will keep sending information on it as new articles are written."

"Fred White is unique in this field," says Keese. "He is the only man in the United States with the knowledge and experience to do this."

Speaking of publications, Louis J. Horn, associate research editor, is on the other end of research. He helps engineers prepare publication of results, selecting appropriate language, charts, and photographs that best tell the story in such a way that the report will be of value as soon as possible to the research sponsor. His second objective is to disseminate reports from TTI to a technical audience throughout the United States and in foreign countries. This is done through TTI publications and technical journals.

As highway use has increased, operation of the facilities has become more and more important. "We've got to make the best use of what we've got; we can't keep on building more and more highways," is the way Keese expresses it.

The division at TTI primarily concerned with this aspect of highway research is the Design and Traffic Division headed by Dr. Donald R. Drew.

Patrick McCoy, engineering research associate, takes notes during lighting tests at the TTI proving grounds. Luminaires can be mounted on experimental poles at any height up to 150 feet.

Dr. Neilon J. Rowan, head of the Driving Environment Department of Design and Traffic Division, is currently concerned with high-level lighting.

"Freeways built in urban areas at perhaps as much as $3 million per mile haven't operated as we hoped they would, especially at peak hours," Dr. Drew explains. "We couldn't foresee the two or threefold increase in demand. We are trying to control demand capacity by controlling the number of cars on the freeway. There is not only a space problem; a time problem is also involved — everyone tries to enter the freeway at 7:30 in the morning, and that is a self-defeating phenomenon."

Research at TTI is aimed at optimum use of the freeway. "Right along the knife edge is optimum flow of operation. One more car, and the freeway falls into congestion," says Dr. Drew. "There may be only three or four minutes during rush hours when congestion will occur, but those few minutes can boggle a freeway for an hour or more."

Ramp metering, either by manual controls or electronic, has been one answer to the traffic problem. Gap detection devices are also being studied. These devices take the decision on whether to enter the freeway from the driver.

Frank H. Scrivner, head of Pavement Design Division, looks at the freeway from another angle. His field is the structural design of pavement, a search for the most economical combination of materials and thickness to carry the traffic the road is designed for.

Prime project in this division is the application of results of the AASHO road tests made in 1958-60 in Illinois to Texas conditions. Target date for a complete computerized design procedure for Texas highways is August 1968.

In connection with this study, TTI has 400 test sections on existing asphalt-surfaced Texas highways and 100 sections on concrete highways.

"Soil mechanics is a large part of our work," says Scrivner. "We have to know the strengths and characteristics of the subgrade."

Test sections of pavement built at the TTI Research Annex also are used for pavement design study. Using eight different materials in various combinations and thicknesses, they were designed with the help of the Highway Department and the Highway Research Board. District 17 maintenance forces constructed the sections, all at the same time. This means that several factors influencing surfaces have been held constant — method of construction, time of construction, and environment.

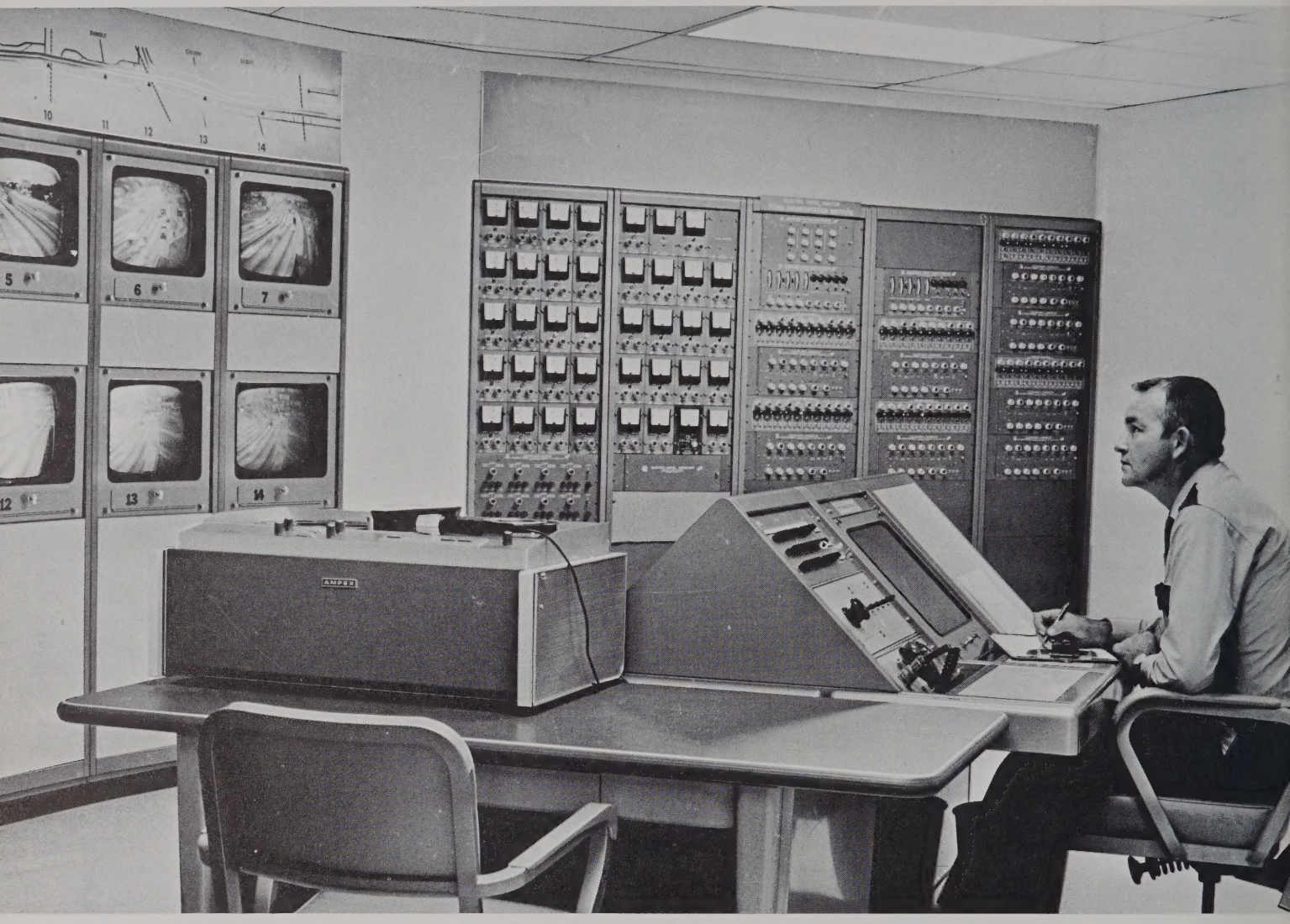
Design of the various sections was planned so that testing can be done from the surface; it is not necessary to tear up the surface to check layers underneath and determine what each material contributes to the composite strength of the roadway.

In testing sections under traffic, results may not seem to make sense. In this case, the researchers make use of a new technique in highway work, the group diagnostic panel. Several men get together and bring different disciplines to bear to diagnose apparently aberrant behavior of pavement. The panel uses a pragmatic approach; by considering all relevant technologies, a treatment is worked out. If it is effective, the problem is solved; if it isn't, then the problem lies elsewhere. TTI men are also using this technique in the field of railway grade crossing hazards and in safety research.

Professor Bob M. Gallaway, head of the Highway Materials Division, claims that his division's most significant work is in the area of safety. "Our work complements work the Highway Department is doing."

One of the Materials Division's primary areas of study is in the development of man-made aggregates for highway pavements. They have just completed a three-year project to find means of reducing damage to glass and finish on automobiles. Synthetic aggregates were tried because they are of material too light to fly up and hit vehicles. Use of the aggregates could mean a reduction in insurance rates since 75 per cent of claims in comprehensive insurance is for glass and finish damage caused by flying stones.

"After looking into the product, which has been produced in Texas



TV surveillance and computer facilities in the surveillance and control office for the Gulf Freeway . . . monitored by a Houston police officer.

for many years — long enough for the patents to run out — we found other good things about it," says Gallaway. "Synthetic aggregate doesn't polish with the passage of traffic so it holds its stopping capability. It can be used in a seal coat or plant mix, laid one inch or 1½ inches thick, to restore the riding quality and skid resistance of a highway pavement."

The aggregate research is industry-sponsored. TTI accepted the project because of the safety applications. "Between 4,000 and 5,000 cubic yards per day of synthetic aggregate are being used in Texas now, but we could use five times that much," Gallaway believes.

Another study in the highway materials division is on the compaction of asphaltic concrete and on the flexibility characteristics of composite systems. Object of this work is to design the most durable pavements for various types of subgrades.

Synthetic aggregates are also used in structures, and for this reason they come in for their share of attention in the Structural Research Division, headed by T. J. Hirsch. Hirsch emphasizes the interdisciplinary approach: "Chemists, designers, geologists, and computer people are all working together on this research. One of our prime aims is to come up with classifications of synthetic aggregate so all producers can classify their product and know what it can be used for. A lower quality of aggregates can be used in flexible pavement than in structures, where light weight is important, and even lower quality aggregate can be used for stabilized base material."

Hirsch claims, "No one anywhere else has the knowledge the researchers at TTI have." Nor the facilities: "We have the only active big rotary kiln for applied research."

Concrete technology is a continu-

ing program in the Structural Research Division. In bridge structures the problem is not strength but durability. To test durability, TTI facilities include controlled temperature and humidity rooms where concrete can be tested in automatic freeze-thaw, wet-dry cycles.

Safety aspects of highway structures is perhaps the most dramatic of the projects in the Structural Research program. It involves first of all the study of roadside hazards, like bridge abutments, signs, and luminaire poles. Where possible, such hazards are moved as far as possible from the roadway. If they cannot be moved, one solution is to make them yielding.

This reasoning has led to such important safety breakthroughs as the breakaway sign, first installed on Texas highways after its development by Highway Department engineers and TTI researchers, and now specified by the Bureau of Public Roads for all federal aid highways in the United States. The same principle is being applied also to light standards.

Hirsch comments, "Our safety measures are passive, not active, but if all Interstate highway signs were breakaway, we would reduce the accident rate immediately by 7 per cent. If all light poles were breakaway, the accident rate would be reduced by 5 per cent."

A third aspect of safety research is directed toward roadside hazards that cannot be moved nor made yielding, such as bridge supports and abutments. This research has brought a new term into the vocabulary of highway engineers and TTI researchers — "impact attenuation devices." Crash tests now under way at TTI proving grounds are concerned with finding a way to bring a vehicle to a controlled stop after it has hit an immovable object. Such devices are energy-absorbing and guide out-of-control vehicles away from head-on impact with a structure.

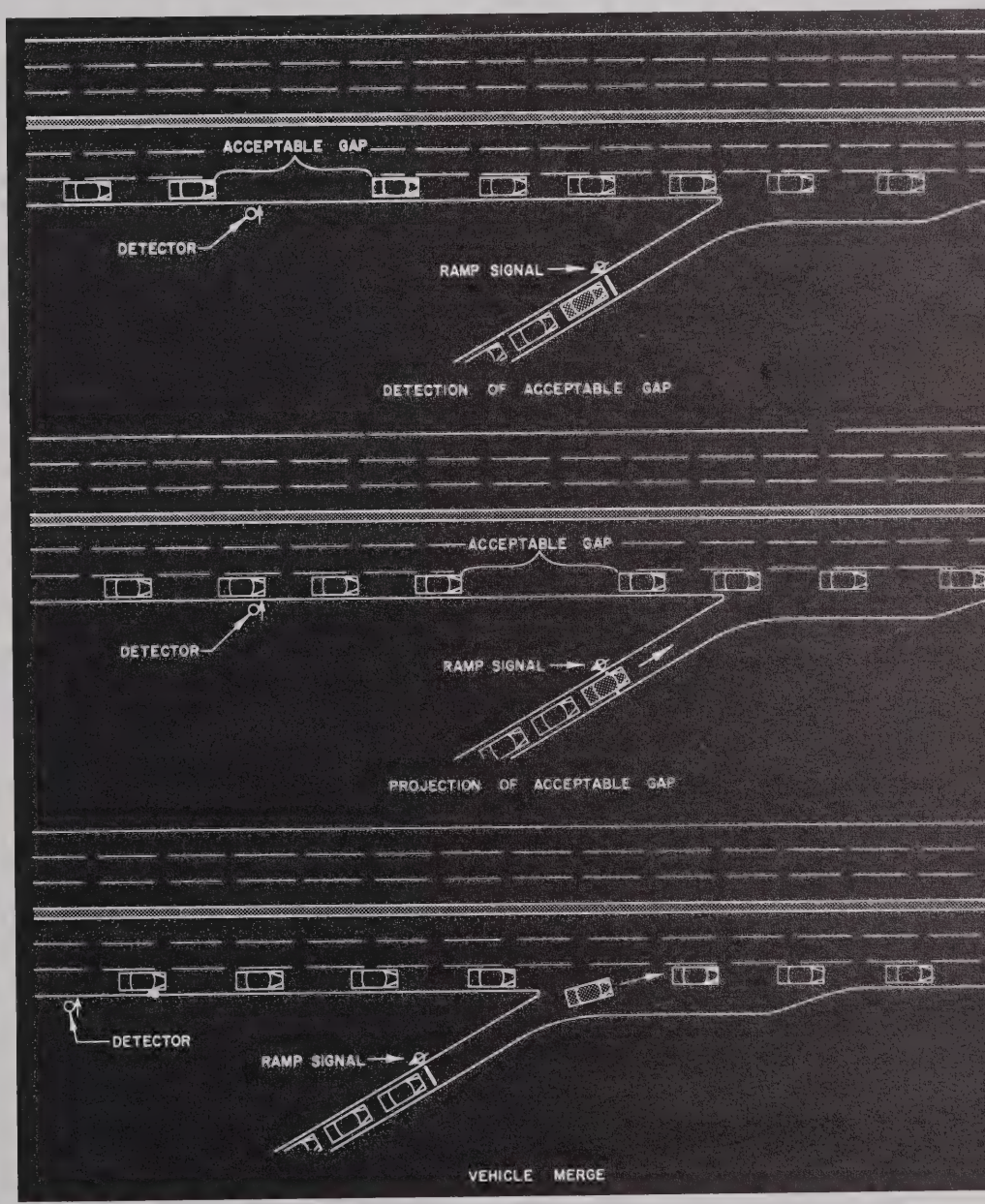
"It is important to try to keep an accident from happening, but a more significant contribution is to make an accident survivable," says Keese. Making "fatal" accidents survivable is the object of the impact attenuation research. Some guard rails may be impact attenuating, and other devices now being tried are steel drums filled with empty beverage cans and a type of dragnet.

Dr. Neilon J. Rowan, head of the Driving Environment Department of the Design and Traffic Division is also interested in safety. His concern is the environmental conditions highway engineers create, drivers' reactions to those features, and their effect on operation of the facility.

One feature now under Rowan's scrutiny to improve the driving environment is high-level lighting.

"Our object is to develop a lighting system and provide designers with the necessary criteria to design and

Diagram of the gap acceptance mode of ramp control tried successfully by TTI on the Gulf Freeway in Houston and the John C. Lodge Freeway in Detroit.



Library facilities at TTI complement Texas A&M's engineering library.

construct interchange lighting systems. We are just scratching the surface with high-level lighting, but we have made some conclusions. For instance, we believe the minimum height for interchange lighting is 75 feet above the uppermost structure of the roadway."

Luminaires 100 feet above the ground are being installed on an experimental basis in San Antonio at the interchange of IH 10 and 410. By making installations before the research is complete, it is possible to study the lighting under traffic conditions.

Members of the research staff, traffic engineers, highway design engineers, and representatives of the Highway Department, BPR, and municipalities are all working together in evaluating the high-level lighting.

Highway Economy and Transport Operation are the two departments of TTI's Transportation Economics Division, headed by Assistant Director Dr. Charley V. Wootan. An economist, Dr. Wootan is concerned with economic impact studies, effects of right of way acquisition, beautification, traffic, truck freight.

This division is currently drawing up standards for billboards and studying how application of standards already published would affect sign companies and sign users. For example, how much business is generated by lead-in signs along the highway?

A key term in Transportation Economics is "cost effectiveness." In the past, according to Dr. Wootan, "we have made decisions on the basis of cost benefit rather than effectiveness — benefit meaning what we will get back in relation to what we spend. But, for cost effectiveness, we take into consideration more than the dollar value; we evaluate on the basis of safety, or a higher level of service."

Cost effectiveness is now a factor in all research, and economists are a part of the team with engineers in such areas as stage construction, skid resistance, pavement design.

"We have to consider external contributing factors," says Dr. Wootan. For example, why design signs so that they are good structurally for 50 years when they will probably have to be changed in 20 years? This type of design is evident in many old bridges. They were built to last forever, but now they are too narrow for traffic. It is difficult to forecast technological changes."

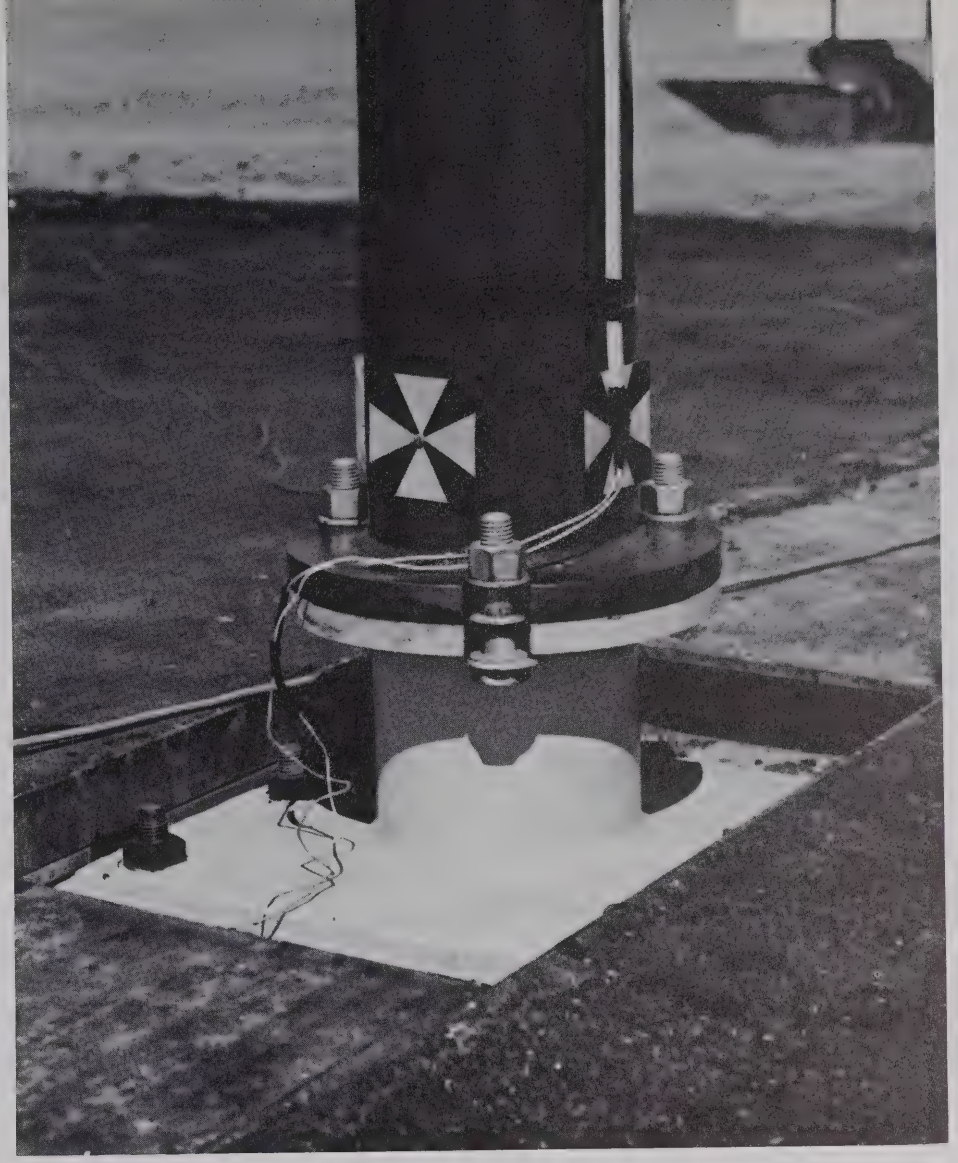
Transportation Economic Division

is also researching traffic studies for the trucking industry. TTI researchers are working to computerize truck freight traffic, scheduling operations, and rate setting. They are providing the industry with a means to analyze business flow and have a current picture of operations at all times.

Dr. Wootan's division is also studying railway-highway crossings to determine what causes the tremendous number of accidents and fatalities at grade crossings. Here the diagnostic team comes into its own, since so many factors are involved. TTI is concerned not only with the cause, but the cure, and is trying to ascertain what kinds of protective devices are most effective.

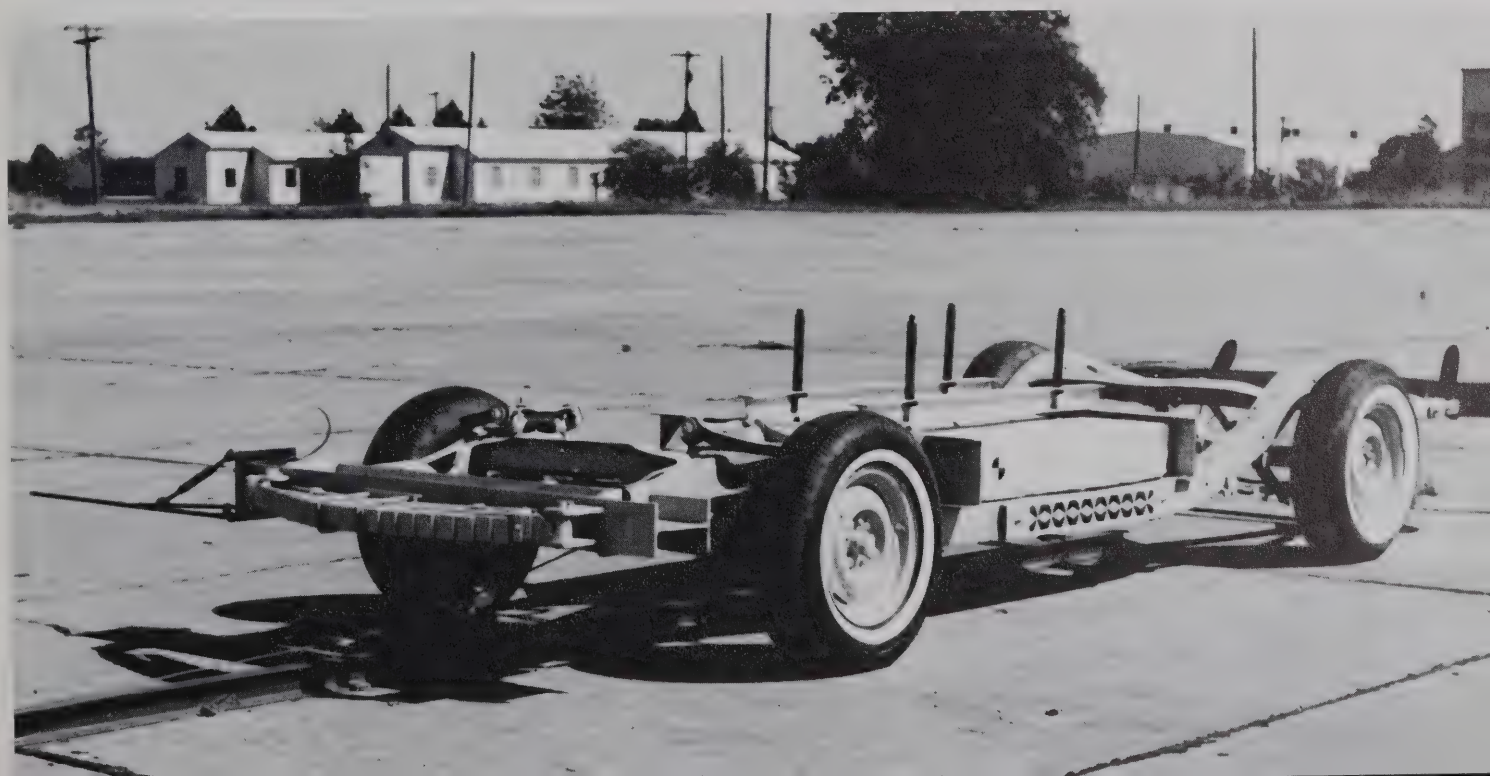
From railway crossings to freeway traffic control, from high-level lighting to pavement design, TTI covers every aspect of highway transportation.

Director Keese credits the Texas Highway Department: "The Highway Department set up this research arm, and through TTI the Highway Department has stayed ahead. We must credit the Department's administrative foresight in setting up the environment at TTI where researchers and highway engineers could work cooperatively." ■



At the TTI proving grounds, this light pole was designed for a crash. The bolts slip out of their slots in such a manner that the angle of impact does not affect the pole's behavior.

Experimental vehicle developed for light pole crash studies at TTI.



More than 500 engineers and technicians listen to incoming State Highway Engineer J. C. Dingwall at the opening session of the three-day short course.

Discussed at Short Course

These Changing Times

Highway programs of the future must give greater emphasis to traffic relief in the urban areas and modernization of the age-old primary highway system, State Highway Engineer D. C. Greer told those attending the Forty-First Annual Highway Short Course at Texas A&M in November.

Greer was keynote speaker at the opening session in the G. Rollie White Coliseum for the three-day course in highway engineering. (Full text of Greer's speech is carried on page 18.) More than 500 Highway Department employees from the districts and Austin main office, A&M professors, and representatives from highway-related industries were on hand for the opening meeting. For the next two days the engineers and technicians would delve into such subjects as: Structures — materials and construction, maintenance; Pavement Design — materials and construction; Right of Way — automated records, utility policy; Maintenance — emergency operations, Beulah Test; Management — what is management, special management tools; and Design — implementation of research for safety.

In welcoming delegates, A&M President Earl Rudder said the university is training the "young lions" that the Highway Department will need. He cited the Texas Transportation Institute as being an agency of "the first order," made so because of its cooperative research work with the Highway Department.

Speaking of Greer's new teaching job with The University of Texas, Rudder said he was glad that UT had

kept him in Texas "where we need him." Rudder pledged that A&M would help new State Highway Engineer J. C. Dingwall in "any way it can."

Dingwall told the delegates, "The more complex transportation becomes the more we need to turn to research for help." He said the Highway Department will continue to support research in the future.

"These are unusual times in an unusual atmosphere," Dingwall continued. "I hope the Short Course will help us learn from these discussions of new ideas, and improvements of old methods.

"We must be able to change, to bend with the wind. We must learn to adapt ourselves to these changing times. Every man here must continue to develop his mind. Every man must meet new challenges every day. And the Highway Short Course is aimed at achieving these goals."

Highway Commission Chairman Hal Woodward said the Highway Commission appreciated the great job that A&M and the Texas Transportation Institute are doing. He told the highwaymen the Commission "has a high regard for the district engineers and their capable staffs."

Woodward cited decentralization of the Highway Department as a reason for its greatness, while at the same time it puts a "great responsibility on your shoulders." But, he added, the district engineers meet that responsibility as shown by their ability to communicate and to deal with local news media, members of the Texas Legislature, and the public in general.

Highway Commission Member Jack Kultgen told conferees that he had worked with President Earl Rudder for three years to get the James Connally Technical Institute for A&M and Waco. He said the Highway Department has a big stake in the school to help make it a success, because "eventually we hope this school can turn out men with the technical skills needed in the Highway Department." Kultgen asked district officials for their suggestions to help coordinate Department needs with the new school.

PRESIDENT EARL RUDDER
. . . young lions for the Highway Department

STATE HIGHWAY ENGINEER J. C. DINGWALL
. . . meet new challenges every day.

Two Highway Department engineers — J. R. Stone, district administrative engineer in Fort Worth, and Bill Ward, urban designing engineer in Houston Urban — received awards for their "outstanding service in highway engineering." Stone won the Gibb Gilchrist Award, named in honor of the former state highway engineer and now chancellor emeritus of the A&M system. Ward won the D. C. Greer Award, named for the retiring state highway engineer and distinguished A&M alumnus.

Former Highway Commission Chairman John S. Redditt, a Lufkin attorney, provided the $1,000 prizes and certificates and made the presentations.

As Greer arose to make the keynote address, the crowd gave him a standing ovation.

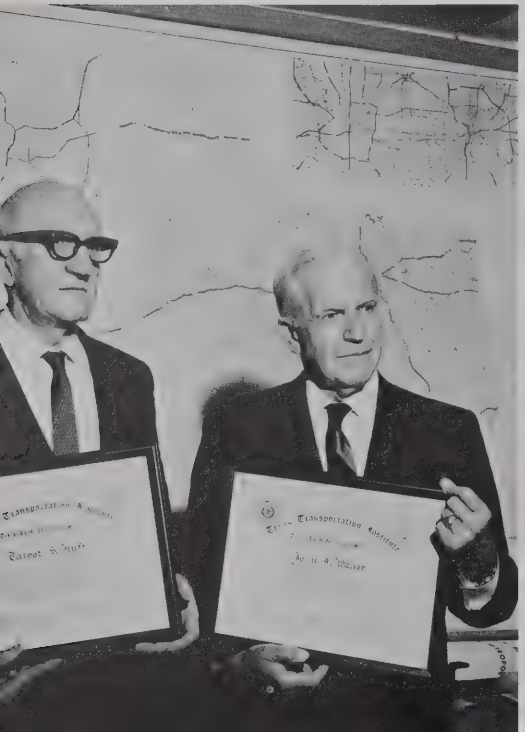
"Thank you. Any professor appreciates a standing ovation," quipped Greer. He asked the conferees to forgive him for reading his speech, but that he was training for his new teaching job by writing out his remarks.

After Greer's speech, Dingwall outlined the highlights of the technical sessions for the next two days. Jack Keese, director of TTI, made a few announcements and then introduced Jack Maguire, executive director of the Ex-Students' Association at The University of Texas. When Greer saw

D. C. Greer, retiring state highway engineer, right, and Highway Commission Chairman Hal Woodward listen as Texas A&M President Earl Rudder welcomes delegates to short course.

This 50th anniversary photographic display of old highway scenes proved a popular attraction in the A&M Memorial Student Center. The 40-foot exhibit was prepared by Travel and Information Division.

A TOKEN OF APPRECIATION — T. S. Huff, chief engineer of Highway Design Division, and John Waller, chief engineer of Maintenance Operations Division, display certificates of appreciation given them by the Texas Transportation Institute at Texas A&M. As members of the Department's Research and Development Committee, the two men have contributed greatly to the cooperative research program between the school and the Department. The awards were made at a luncheon during the annual Highway Short Course.



Maguire start down the aisle toward the podium, followed closely by Lewis Bracy, vice president of the Capital National Bank in Austin, his face flushed, and then he broke into a broad grin. Bracy was wearing a bright orange blazer and Greer knew something was up.

Maguire said he was at A&M for a special occasion.

"I had hoped to have TV coverage, but the board of directors at A&M turned us down. I am here as an official representative of The University of Texas to thank A&M for sending us one of its most distinguished alumni. We're proud he's going to be one of us. His outstanding highway engineering achievements make him special — and we're here to extend a special welcome."

Maguire said Department employees at the main office had taken up a collection to give Greer a membership in the 9/10 Club, an orange blazer which is the membership badge, and had enough money left over to buy him membership in the UT Ex-Students' Association.

The 9/10 Club, Maguire explained, is composed of college graduates "who are unfortunate because they were educated at some school other than UT." These "unfortunates" wear orange blazers, with a 9/10 crest on the pocket in their school's colors and support the Texas Longhorns for nine football games of the season — until the 'Horns play their alma mater.

"They pledge to Darrell Royal they will support UT for nine games — except when UT plays their school."

Bracy, a charter member of the 9/10 Club and an Aggie, then presented Greer with an orange blazer.

"Although we know where his chair will be, we can guess where his heart will be," declared Bracy. "Beat hell out of Alabama!"

Greer put on the jacket and Kultgen handed him a maroon and white striped tie which Greer draped around his neck.

"I wish I'd had this Thanksgiving," said Greer. "I could have dolled myself out. And just think, they brought a bank vice president all the way from Austin to present it to me." ■

"You now belong to the Ex-Students' Association of The University of Texas"—Professor Greer looks at his latest honor. Jack Maguire also welcomed Greer to the 9/10 Club. Lewis Bracy stands behind Greer with an orange blazer for him to try on.

Greer breaks into big grin as he slips on his new orange blazer. Crest on the pocket says "Sere Fidelis"—Almost Faithful. Crest also carries stylized 9/10 figures and school colors.

Greer Goes Out In Blaze(r) of Glory

Jack Kultgen hands Greer maroon and white tie which is to be worn with the new blazer. Note "Old Sarge" caricature near bottom of the tie.

Greer joins with Bracy, left, and Earl Rudder as they give "Gig 'em Aggies" sign.

First GILCHRIST, GREER Awards

Two Highway Department engineers—J. R. Stone and Bill Ward—are winners of the newly established Gibb Gilchrist and D. C. Greer Awards for "outstanding service in highway engineering with the Texas Highway Department."

Presentations were made at the 41st Annual Highway Short Course at A&M on November 28.

Each award carries a cash prize of $1,000 and a certificate and is to be awarded each year by Texas A&M University at the annual Highway Short Course. The awards were provided by Lufkin attorney John S. Redditt, former chairman of the Texas Highway Commission.

The president of A&M named Charles E. Simons of Dallas, Weldon Hart of Austin, and Dr. M. T. Harrington of A&M to the Award Selection Committee. Simons is chairman. The Highway Department furnishes the committee a list of candidates and their achievements.

Those eligible for the awards must have four years or more of service with the Highway Depart-

...to J. R. Stone

"It is a great honor to receive this award in the name of Gibb Gilchrist," said J. R. Stone, first recipient of the Gibb Gilchrist Award. "I find it hard to believe it's happening to me. Mr. Gilchrist was chancellor at A&M when I was in school here. If somebody had told me I would be getting an award in his name I wouldn't have believed it."

J. R. STONE accepts the Gibb Gilchrist Award from John Redditt. The award carries a $1,000 cash prize, and Stone said, "Somebody told me an Internal Revenue man was standing in the wings waiting for me."

Stone, district administrative engineer in Fort Worth, was happy about winning the Gilchrist prize, but was saddened by the loss of his friend, Assistant District Engineer Joe Bingham, who died a few days before.

"Joe wrote the letter for my nomination," said Stone. "I wish he could have been here for the award. And Mr. Crook wasn't here, either. (District Engineer R. W. Crook had gone back to Fort Worth to attend Bingham's funeral.) He's the one who gave me the assignments that made this award possible."

Stone, a 43-year-old graduate of Texas A&M, began his career with the Highway Department in 1948. He has held the titles of engineering assistant, associate resident engineer, associate designing engineer, designing engineer, traffic engineer, senior traffic engineer, district maintenance engineer, supervising designing engineer, and district administrative engineer.

"I've had several jobs and titles," continued Stone, "but the Fort Worth-Dallas transportation study I worked on had more to do with my getting this award than anything else. It was a complex job, and it certainly was a large area for gathering data. It took a lot of reading and study before we ever started the actual study. There were a lot of fine people on the job, and I owe a lot of this to them.

"I haven't told my wife about the award yet," said Stone. "I'll call her tonight and give her the good news. I imagine some of the money will go to our boy's education fund. My indebtedness to the credit union is my biggest investment, so I won't pay that off."

Stone paused a moment to reflect on his honor.

"I'll tell you . . . winning this is an inspiration to me to work harder to achieve this same plateau as these other engineers who I know deserve this award more than I do." ■

Presented

ment and be actively engaged in some phase of highway engineering —planning, design, construction, maintenance, bridges, materials and research, or traffic. To stimulate contributions from those advancing in the ranks, the state highway engineer and his principal staff assistants are not considered candidates for the awards.

BILL WARD, first recipient of the D. C. Greer Award, gives a big grin and warm handshake to John Redditt, the man who made it all possible.

...and Bill Ward

"I am real proud of our organization. All this work takes a lot of effort—team effort. It's not a one-man show. This award is a tribute to the whole office."

In acknowledging the honor of being the first recipient of the D. C. Greer Award, Urban Designing Engineer Bill Ward saluted co-workers in the Houston Urban Office. Ward said he was "amazed that the judges could select one person for an award like this.

"Engineers in different parts of the state have different jobs," he continued modestly, "different challenges. I am fortunate. The Houston urban area is a challenging one with enormous potential."

"Bill's leadership in the Design Section has been an inspiration to those who work under his immediate supervision, and the Houston Urban Office is recognized as having one of the better engineering organizations in the state," says Ward's boss, A. C. Kyser, engineer-manager of the Houston Urban Project.

"Bill is recognized throughout the state for his resourcefulness and engineering ability, particularly in the design of bridges and geometrics," continued Kyser. "In October, Bill received a plaque from the Prestressed Concrete Manufacturers Association of Texas for leadership and recognition of outstanding design and use of prestressed concrete. He has either designed or supervised design of a number of post - tension concrete structures which have proven very economical to construct and maintain.

It was Ward who made the original suggestion that the strutted girder type bridge be investigated for the high-level, long-span bridge over the Houston Ship Channel. Later design computations confirmed practicality of his initial conception.

Ward began working for the Highway Department in 1949 as an engineering assistant with the Houston Urban Project. Through the years he has served as chief inspector, designing engineer, senior designing engineer, supervising designing engineer, advancing to his present post in 1960.

"His credentials are long, his innovations impressive, his selection appropriate," says one of Ward's co-workers.

When Ward, a bachelor, was asked what he planned to do with the $1,000 prize money, he quickly replied, "Spend it. Having worked for the Highway Department so long, accumulating money has never been a problem." ■

"A Glance Back and a Long Look Down the Road"

State Highway Engineer D. C. Greer presented the following speech at the Forty-First Annual Highway Short Course, held in November at Texas A&M.

This will be my last appearance before you as state highway engineer of the Texas Highway Department, as I am retiring on December 31. I have accepted a most challenging invitation from The University of Texas to occupy the newly created chair as Professor of Highway Administration, effective February 1. I entertain great hopes that the scholarships now being provided at Texas A&M in highway engineering, together with my new privilege with The University of Texas, may contribute in the long pull to strengthening the engineering manpower and techniques of the Texas Highway Department. At least this is my dream.

The title of this talk implies that I will devote a considerable portion of my time to looking backward in the history of the Texas Highway Department and also a portion of the time in looking ahead. I have always felt that we may waste too much time looking behind us and that we should devote more of our time to thinking ahead. It is true that we must look backward to profit by our mistakes and our achievements; but this, in my opinion, should only be a fleeting glance, with most of our efforts devoted to that which lies ahead.

All of us who have had the privilege of working in the development of Texas highways have been most fortunate in the glorious opportunity to serve our fellow man in our chosen profession. At the close of each day we may look back on the work that has been accomplished and have that great inner satisfaction that we have produced something that will contribute to the economic and social well-being of our state and its people. We have created something that will be used extensively by our fellow citizens of the state of Texas and of the nation, and will sometimes be appreciated by the public at large.

We would all admit that over the years we have made mistakes, but we have been honest enough to admit them. We have been farsighted enough to profit by those mistakes, as well as to see that they do not occur again. In general, however, I feel that you men and our predecessors have done a great job in a manner that has been sincerely appreciated by the majority of the people of our state. I commend you for this fine work, and express my deep and sincere thanks for the wonderful loyalty and cooperation that you have extended to me as your chief administrative officer.

Challenges Lie Ahead

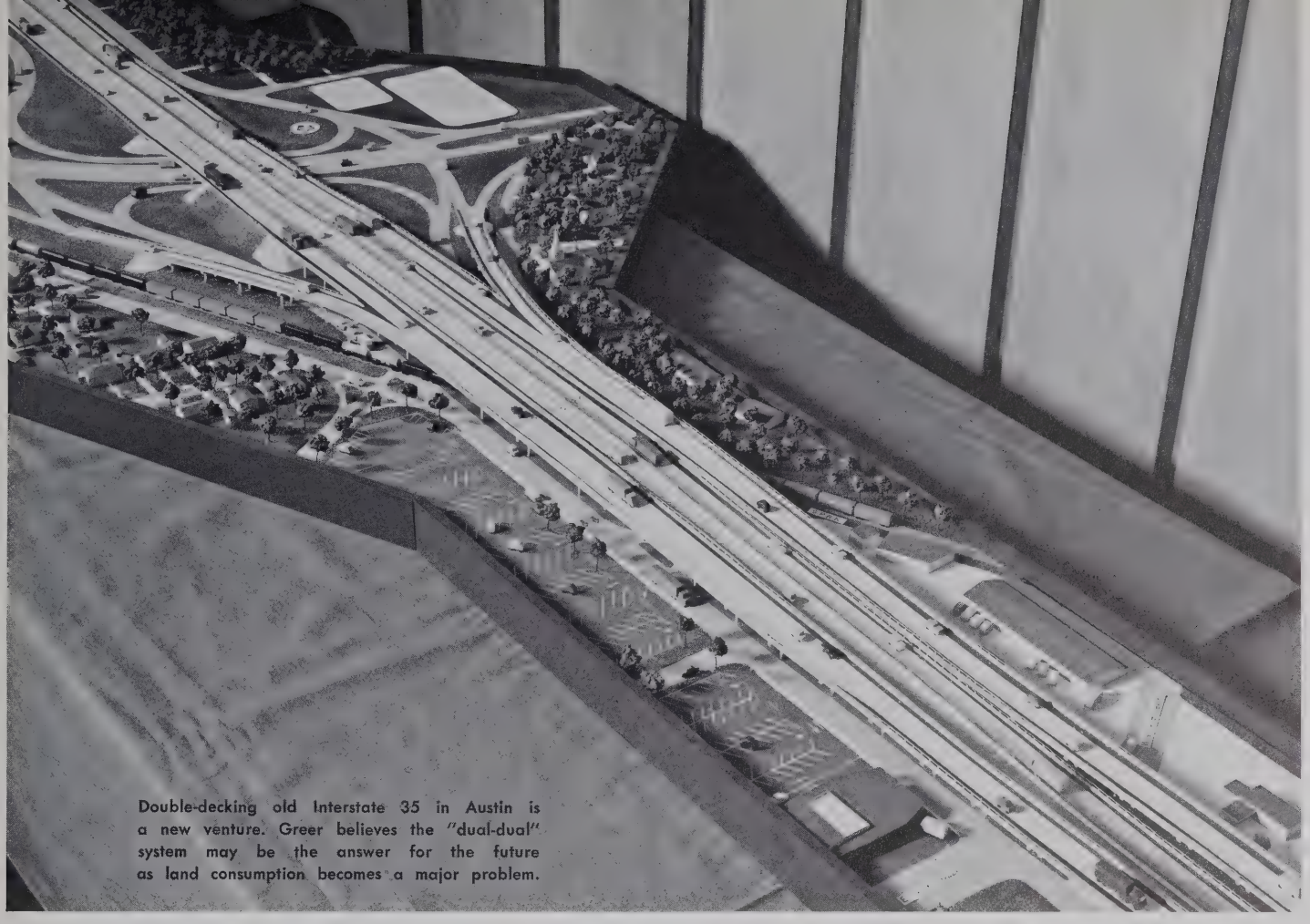
Now permit me to reason with you on the challenges that lie ahead. Even though your accomplishments in the past have been second to none in the nation, you must not let it rest there. You must constantly strive to improve on that which we have been doing, constantly bearing in mind that honesty, courtesy, and efficiency must always be the motto and objective of the Texas Highway Department.

I must predict that the path that lies immediately ahead will become rougher and rougher. Even though you are in the era of your greatest achievement, I fear that all elements with which we deal are becoming less appreciative of these accomplishments. To cope with this, you must maintain courage, tolerance, and patience. Right will eventually prevail despite the needling and intolerance you may be required to endure.

We seem to be presently involved in a rather unusual era. In this, the greatest era of highway building that has ever been known, we have learned that there is more involved in building today's highway than the straightest line between two points. We have learned that we must consider the aesthetics, the local culture, the economic value to the community, the public conveniences, and other special traffic considerations that are expected by the public to be integral parts of today's and tomorrow's highway.

Obstacles to Increase

We have now and can expect in the future many partners, more and more free advice, and concepts of how public highways should be designed and built. We will unquestionably become more involved with professional people from the fields of landscape, architecture, history, sociology, and archeology, just to name a few. When we add this long list of new advisers to those involved in air pollution, stream pollution, parks, wildlife preservation, fishing areas, and other elements not yet conceived, we seem to encounter insurmountable obstacles to the building of a public highway.



Double-decking old Interstate 35 in Austin is a new venture. Greer believes the "dual-dual" system may be the answer for the future as land consumption becomes a major problem.

All these things seem to be carefully designed not only to extract a portion of the highway user revenues for purposes other than the road itself, but also to provide a definite slowdown in development of the modern highway system so badly needed. You only have to look at the undisputed figures on the anticipated increase in population, with the corresponding increase in motor vehicle registration and the use of such motor vehicles, to reach the definite conclusion that highway work must not be slowed down — and, in fact, it should be expedited.

I predict that the needs and desires of the people of this country will prevail over those who would endeavor to slow down the program of highway development. The people may be slow to awaken to that which is happening, but they will eventually awake. It will unquestionably be the duty and privilege of our leaders to acquaint the people with the facts so that this well-planned slowdown will not be lengthy or serious.

It is true that the modern expressway does require a sizeable amount of land. For proper design, the urban expressway cuts a wide swath through cities. The accusation of some of these new experts that you are consuming too much valuable land might, in some cases, be true. I am sure you know, however, that in return for removal of these lands from the tax rolls you are substituting a valuable, new natural resource that will be of inestimable benefit, both in usage and in increased taxable values.

Double-Decking New Venture

We have just started here in Texas on a rather new venture in highway design; namely, the double-decking of an existing expressway. If this is successful — and I predict that it will be — you will see more of this in the future because of the constant hue and cry of land consumption. In fact, there is a distinct possibility that because of the rather heavy and consistent complaints along this line received by our lawmakers and the lack of counteracting arguments from others, it may easily become legislative policy to take a temporary vacation in the construction of urban freeways. This would permit the public to catch up with highway engineers on the advanced planning and designs contemplated by urban expressways of today.

I believe the highway program of the future must give greater emphasis to traffic relief in urban areas

and a modernization of the age-old primary highway system. These are the places where the lifeblood of our people and our commerce are deeply involved, yet they are using outmoded facilities. The new program now being presented to the United States Congress, with the backing of the majority of the states, will definitely accomplish this objective.

I might add that if this program is embraced by the National Congress as recently presented, heavy expenditures will be made in years ahead in urban areas and on the outmoded primary system. In urban areas, however, it would be left up to the states as to the type of improvement on which these funds would be utilized. This would give states leeway in adjusting to conditions found in various cities throughout the country. Whether it be arterial streets or expressways would depend to a large degree on that which might be mutually agreed in true partnership arrangement between city governments and the state highway commission. Both must come eventually, and the question will only be which comes first and which second.

Trouble Ahead

In the years immediately ahead, you will no doubt encounter many frustrating conditions brought to you by the people who operate motor vehicles over the highway system. One of these will be the constant hue and cry for more speed, more width, and more weight. This has been true to a certain degree in the past, but it will become more intense in the years immediately ahead. Top Federal officials are theorizing that it is time for the Federal government to take over from the states the determination of the sizes and weights of motor vehicles.

This would not only be another loss of states' rights by the states themselves, but might well be the opening mechanism for certainly more width and more weight on the highway system. This could easily come about due to the weakness on the part of the states of an interlocking and coordinated pattern of sizes and weights by cooperative endeaver among the states. This has been an almost impossible task and Federal intrusion in this area will no doubt be accelerated. The question will definitely arise — as this era of more width, more weight, and more speed comes into being — namely, where is the money coming from to build that which the engineers not only can build but are willing to build to accommodate such conditions if the money is forthcoming?

You will become more frustrated because the very people who are urging these so-called progressive steps will be the last to agree to put up any of the money to achieve the road system needed to accommodate such an objective.

Maintain Geometric Standards

As I recently cleaned out my desk, I ran across a speech that I had delivered to this Highway Short Course 29 years ago when I was chief engineer of Design and Construction. I reread this speech to see whether anything therein was valid today. One of the main points that I made at that time was that, since there was not enough money to do every highway job in the ideal manner that it should be done, I would urge that, with what money was available, you give the greatest emphasis to the achievement of high standards of geometrics; namely, alignment, grade line, width of right of way, and so forth. If you had to economize, do so on the structural elements of the road, and you could later come back when more money came your way and add to these structural elements.

As I reread this old speech, I was checking whether this had generally been the policy of the Highway Department over this long period of years. I believe, basically, it has been. And I believe that such a principle has accrued to the credit of the Department over this period of time. I believe that it is still valid and must be accomplished in the future.

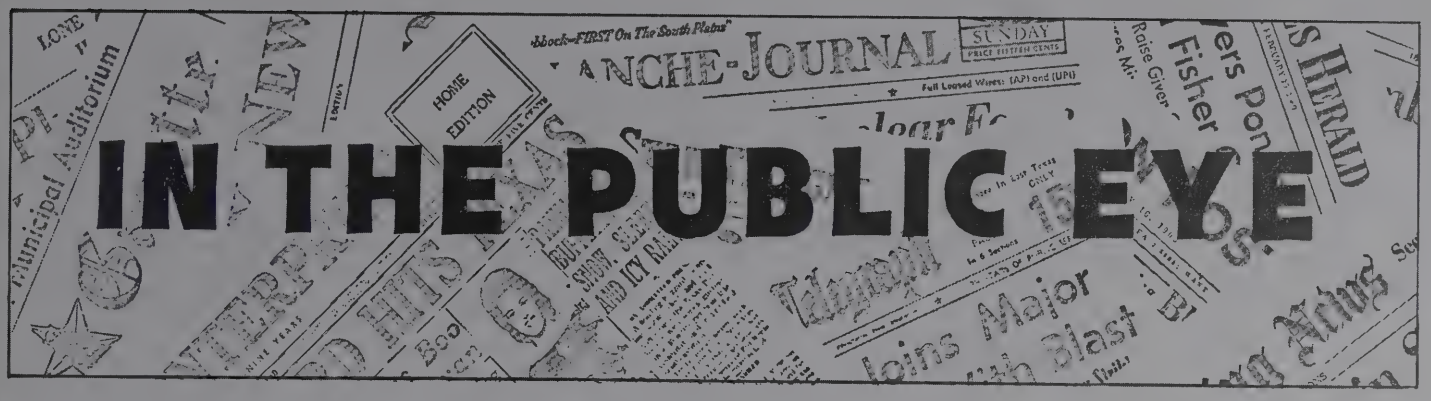
Right Will Prevail

In conclusion, permit me to pass on to you two somewhat questionable bits of wisdom. One of these is that I hope you will not be thin-skinned in the rough era immediately ahead. If the suggestions are good, take them and incorporate them in your work. If they are not, do not take them — *but do not lose you temper. Right will prevail.*

Secondly, the people will in the long run be the judges of your accomplishments and your needs. They may be slow to defend you or to give you more money. But in the long pull, they will do what is necessary to gain for the people and for the state of Texas and the nation that which they need and desire.

Lastly, you must never forget the value of public confidence and support. This we have enjoyed in Texas. We have earned this respect and we must continue to warrant it. Without public support, you cannot succeed; with it, you cannot fail.

As the future unfolds, there will never be a dull moment. The challenge to you, as men and as engineers, is tremendous. Take advantage of this great challenge and have a part in the molding of the future pattern of our state and our nation. ■



Abilene Reporter-News, predicting — Tube-like vehicular transportation for people who might live in Abilene but work in Dallas and Fort Worth may be a future consideration in Abilene's long-range planning program.

"Abilene has every type of transportation but a deep harbor," District Highway Engineer Jake Roberts pointed out, and hinted that even water transportation may be in the future picture if gigantic proposed Mississippi River diversion projects are carried out.

A highway survey program is underway for three years and due for completion next year, Roberts said.

The Houston Post, bylining Sam Weiner — The Texas Mid-Continent Oil & Gas Association's policy statement here last week backing the concept that motor fuel taxes should not be used for mass transit projects gets into fairly sticky ground.

Understandably, the petroleum organization wants to assure that the taxes which motorists pay on their fuels are used only for the construction, maintenance, and policing of highways.

It seems to this writer that traffic congestion in our metropolitan centers — even with advanced design freeways — is reaching the point where only a thin line, if any, can be visualized between motorists' needs for better highways and their needs for mass transit systems to drain the excess traffic off highways.

In the complexity of modern urban transportation systems, it is difficult to determine whether the motorist would be best served by having his highway user taxes spent exclusively on highways or on both highways and transit systems.

In either event, Metropolitan Houston would be wise to get started as quickly as possible. The traffic buildup on freeways, with Houston growing rapidly, will soon make today's congestion appear mild by comparison.

Corpus Christi Caller, continuing — It will be another 30 to 90 days before all roads in Hidalgo County are clear of standing water, county commissioners said here Tuesday.

The four county commissioners said many miles of roads have been wrecked by the post-Beulah rains and flood runoff, but the full extent of loss cannot be determined until all water has run off and inundated roads have been tested.

Commissioner Ramiro Guerra of Edinburg said anywhere there is water standing in the ditches along the road, "you can be sure the water level under the road is level with the water in the ditch."

"I'll have roads with water on them from now until next May, unless we get a lot of sunshine in the meantime," Commissioner Thurman Carter of Mission said.

Wichita Falls Times, cautioning — The National Foundation for Highway Safety is promoting Sunday, February 25, 1968, as the third annual National Highway Safety Sunday and has begun its efforts early so that the public can begin pointing toward it.

By beginning now to drive legally and safely, all drivers could be in the habit of safe and sane driving by February 25, and much sooner. In fact, the Christmas and New Year holiday seasons would reflect the change in habits. The number of fatalities would be far fewer than the 14,000 that otherwise must be anticipated in the next few weeks.

Fort Worth Star-Telegram, pondering — Highway safety officials would like very much to be able to pinpoint the factors responsible for the decline in auto accident deaths during the first nine months of the year.

One credits seat belts, collapsible steering columns, and other safety features installed in many cars during the last year. He said the steering gear change alone, if made on all cars, could cut traffic deaths as much as 70 per cent. He also cited a Swedish study indicating that use of lap and upper torso belts could almost completely eliminate auto fatalities.

But other factors may have contributed to the drop in car deaths. The general emphasis on the subject of safety, the spread of driver education classes, and growing familiarity with driving conditions on high-speed, freeway-type thoroughfares may all have played a part.

San Antonio News, reporting — Twelve parcels of land are yet to be acquired to complete the Interstate Highway 37 parking area for HemisFair, District Administrative Engineer Franklin Young reported recently.

The Highway Department is pushing to complete purchase of the land for IH 37 as soon as possible. A section adjacent to HemisFair will be made available to the exposition for use as a parking area, according to plans.

Gilmer Mirror, warning — Texans are proud of their well built and well maintained highways, and they should be because no other state in the nation has such a system of fine highways as does Texas.

Texas highways are built and maintained from the tax levied on every gallon of gasoline or motor fuel sold. This year, as there has been in every year for a long time, there is a movement afoot to divert some of this tax money to other purposes, to help finance other state programs as well as build and maintain highways.

We believe gasoline tax money should be used for highways.

The special session of the legislature which will convene in January will consider the thorny problem of raising new money to finance programs which the legislature passed this year but didn't allow financing programs to pay the bills.

Today, only the wind moves along the silent streets of Terlingua, once a thriving mining community in West Texas. The eerie ghost town is one of many illustrations in the new Travel Handbook.

THREE TEXAS HIGHWAYS

Three Interstate highways in Texas—IH 10, IH 20, and IH 35 —will each be longer upon completion than the entire Interstate system in any of 12 other states.

The mileage of each exceeds the Interstate mileage that Connecticut, Delaware, Hawaii, Maine, Maryland, Massachusetts, Nebraska, New Hampshire, New Jersey, Rhode Island, Vermont, or Wisconsin will have when the national system is completed in the 1970's.

Interstate Highway 20 alone has 475 miles open to traffic, a distance about equal to the total Interstate mileage designated for Nebraska.

When completed, IH 20 will be 630 miles long in Texas, from Waskom on the Texas-Louisiana border to a junction with IH 10 between Van Horn and Pecos in West Texas.

The state's main north-south route, IH 35, has 409 miles open to traffic and, when completed, will connect Laredo in the Rio Grande Valley to Central Texas to Gainesville on the Texas-Oklahoma border for a total of 505 miles.

The longest Interstate highway will be IH 10 which stretches from Orange on the Texas-Louisiana border to El Paso on the Texas-New Mexico border, a distance of 879 miles. At present, 391 miles of IH 10 is open to traffic.

According to the Texas Highway Department's third quarter state-

TRAVEL HANDBOOK EXPANDED

An expanded edition of the Texas Travel Handbook has been released by Travel and Information Division.

First issued last year as an aid to pleasure travel in Texas, the enlarged edition now lists nearly 400 cities and towns and includes more than 2,500 items of interest. The 208-page handbook also contains 112 photographs which provide travelers with previews of such attractions as the aerial tramway in El Paso.

Handbook subjects are as varied as the state itself, ranging from the melancholy Empty Saddle Monument in Dalhart to the humorous Popeye statue in Crystal City.

With the Texas Travel Handbook as a guide, travelers may discover dinosaur tracks, Indian pictographs, and buried cities. They will learn the locations of little-known ghost towns and follow specific directions to the most popular attractions of modern Texas cities.

Special sections are devoted to recreational facilities in Texas national and state forests, and in more than 55 state parks. Summaries of Texas hunting and fishing regulations are provided, as well as information on visiting Mexico.

Like all Highway Department travel literature, the handbook is free. Since its initial publication last year, the guide has become a major item among more than four million pieces of travel material distributed annually by the Texas Highway Department.

The guide is available to three-quarters of a million visitors who stop at Highway Department tourist bureaus each year, and by individual request from the Texas Highway Department, Travel and Information Division, P.O. Box 5064, Austin, Texas 78703. ■

SET RECORD

wide report of Interstate progress, 1,661 miles of highway have been completed to Interstate standards, with an additional 230 miles adequate for present traffic.

The 1,891 miles now completed in Texas exceed the total mileage that any state, except California, will have under the total program. Texas' total Interstate mileage will be 3,028 miles.

This total mileage includes four east-west routes, three north-south routes, and six loops and spurs.

In addition to completed mileage and mileage adequate for present traffic, Texas has 360 miles of new highways under construction to full Interstate standards.

Seventy-one miles are in stage construction programs. An additional 124 miles are programmed for right of way acquisition and construction, with 582 miles programmed only for right of way acquisition. ■

FLOODING REPAIR CONTRACTS LET

Major repairs to highway bridges damaged by flooding caused by Hurricane Beulah near Harlingen were included in contracts let last month by the Texas Highway Department.

The structures span the Arroyo Colorado on US 83-77 and Loop 448.

The work will include construction of redesigned spans on the main-lane bridges of US 83-77 as well as placement of piling, replacement of backfill and riprap, and other work.

The projects are the first for repair of hurricane and flooding damage on which the Department has received bids. Much of the damage caused by Beulah and its aftermath has been repaired by Highway Department maintenance forces.

The work is among 37 highway projects on which the Department accepted bids at its regular monthly letting December 12-13.

Contractors bid on jobs totalling an estimated $15.4 million on 483 miles of US- and state-numbered highways in Texas. Bids also were received on projects totalling 60 miles of farm and ranch to market roads at an estimated cost of $4 million. ■

JUNKYARD

SCULPTOR

Z. H. Anderson proved his ability as a writer in the 50th anniversary edition of TEXAS HIGHWAYS as he recalled his early days with the Highway Department. Now we have discovered that Andy is also a "junkyard" sculptor, painter, and architect.

He's a retired maintenance foreman out in West Texas who doesn't look like Santa Claus at all, yet Z. H. (Andy) Anderson has created a year-round holiday atmosphere there in the rolling prairie and mesquite woodland of Fisher County.

Colorful weathervanes and other ingenious devices surrounding Anderson's home alongside US 180 on the western edge of Roby cause children's eyes to light up and grownups to gaze with amazement.

Anderson, who retired in 1958 after 31 years with the Department, builds these unusual items out of what most people would label junk, most of which he found along the highway during his years with the Highway Department.

For example, Anderson fashioned a lifelike 22-foot Saguaro cactus by tapering an old telephone pole, covering it with some corrugated sheet iron, converting two curved Chinese elm tree trunks into "arms" and, for good measure, using reverse nails as the thistles. He then topped it off by painting it a "John Deere green" which he thinned down to exactly the right shade.

A different variety of cactus seemingly growing nearby turns out to be, upon closer examination, a piece of well casing, cut with a cutting torch and spread open like a flower. A painted float from an old water closet is the cactus' blossom.

In another part of the yard is a variety of weathervanes. One depicts a boy feverishly pedaling a full-sized bicycle, while another is a mobile of bicycle wheels which turn in various directions. The wheels have funnels attached to them and are mounted atop an inverted auger from an old combine.

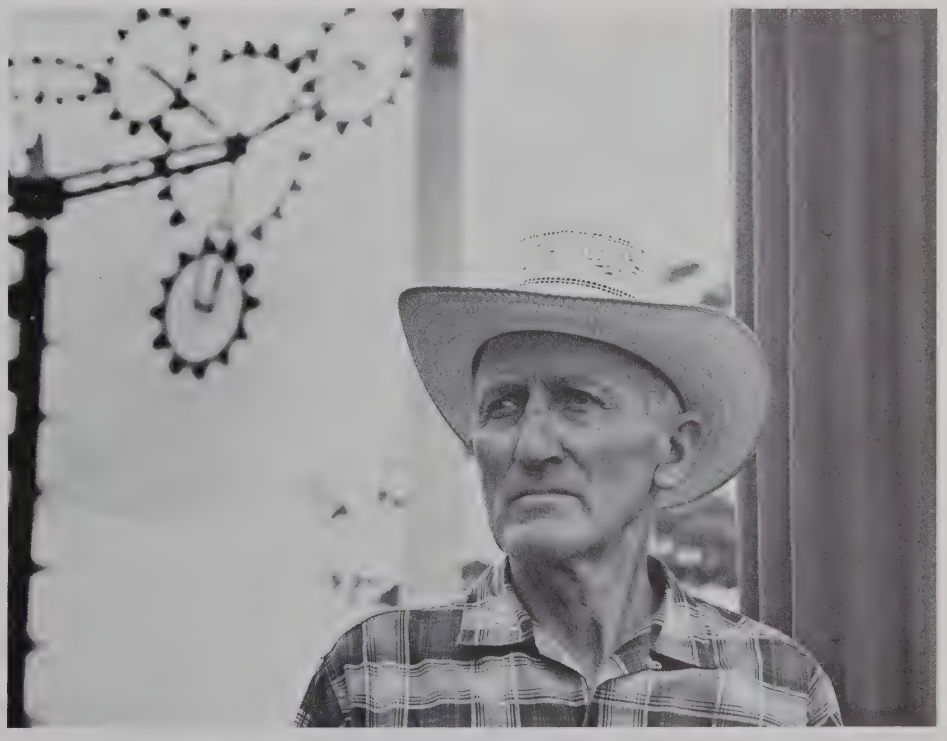
The most colorful of the exhibits is now gone, but it was recorded by many a tourist's camera before Anderson took it down.

The exhibit included a man chopping wood with a real ax, persuaded by a woman who leveled a shotgun at him each time he slowed down. Authentic in every detail, the figures were carved by Anderson from old tree stumps, clad in brightly colored costumes, and controlled by a 15-foot Dutch windmill which still operates.

Anderson said he got the idea to build the windmill from the ones he saw in Europe during World War I.

"You don't see many Dutch windmills around here," he laughed. "Most people think my windmill runs by electricity, but it doesn't. It's set at

Needing a hobby when he retired nine years ago, Anderson began building things out of junk he found along the highways. Weathervane in the background is made of old bicycle wheels and funnels mounted on top of an inverted auger from an old combine.



Andy Anderson, retired maintenance foreman of Roby, is flanked by the unusual weathervanes, giant cowboy head, and lifelike cactus that were created from discarded junk. Anderson's works lend a year-round holiday atmosphere to the prairie and mesquite woodland of Fisher County.

JUNKYARD SCULPTOR

Barrels welded together form an incinerator smokestack in the shape of a huge man. It's unusual, but it's also utilitarian: It keeps the smoke off Anderson's orchard.

Anderson describes one of his weathervanes to two of the hundreds of children who stop by his home each year, most of them thinking they have come upon an amusement park. Anderson got the idea for the windmill in the background from ones he saw in Europe during World War I.

A wood chopper catches the attention of two young visitors. This display once included a woman who leveled a shotgun at the man each time he slowed down on his chopping.

such an angle that it turns about 95 per cent of the time."

The windmill works so well that Anderson once drilled a well and let the Dutch model do some practical work, although he has since covered up the well.

Commenting about the hundreds of cars that stop each year at his home so children and grownups alike can view his unusual creations, Anderson says, "I guess I could have made a lot of money if I had charged admission to look at my stuff, but that wasn't the reason I built them.

"The truth is, I needed a hobby and I figured that some other people might get a little good out of something like this." ■

Wiley E. Carmichael, district engineer of District 12, and his secretary, Mrs. Illien Austin, admire his "Oscar" of the Houston business world after his being honored by the National Secretaries Association as "Boss of the Year." Mrs. Austin, not to be outdone, was named "Secretary of the Year" by the same organization.

District 12 Employees Honored

By W. F. BROWN,
Senior Resident Engineer
Houston, District 12

THE "TOP BOSS" of Bagdad-on-the-Bayou has the "Top Secretary of the Year."

Signal honors were given to two of District 12's employees at Houston recently by the National Secretaries Association. Honored with "Boss of the Year" award on November 2 was District Engineer W. E. Carmichael. A few days later the same local organization elected Mrs. Illien Austin, Mr. Carmichael's secretary, its "Secretary of the Year." This is the first time that a "team" from one organization has received both awards in one year.

The National Secretaries Association is part of an international organization composed of an elite group of 25,000 professional secretaries. A woman who has the right to put "CPS" after her name has earned it by passing a two-day test that is as detailed and technical as would be any professional organization's.

Mr. Carmichael, a 35-year veteran with the Texas Highway Department, is an elder in the Presbyterian Church and a member of many civic groups. In an organization where dedication to the "company" is normal, his is an uncommon dedication to both the trust given him and to the people who work with him. His working hours are from "can to can't" and a large part of the personal time left to him is spent in civic activities which further the story of good highways.

Mrs. Austin, Carmichael's secretary since 1950, has been active in the National Secretaries Association since 1953. The list of positions of trust she has held in that organization is lengthy not only on the local chapter, divisional, and district levels, but on the international level as well. She once missed being elected international president by only 35 votes.

The feelings of the District employees on hearing of the awards were aptly described in a telegram sent to the award winners: "WE ARE PLEASED AND HONORED THAT THE BOSS OF THE YEAR AND THE SECRETARY OF THE YEAR HAVE BOTH BEEN CHOSEN BY THE NATIONAL SECRETARIES ASSOCIATION FROM OUR ORGANIZATION. PLEASE ACCEPT OUR SINCEREST CONGRATULATIONS." ■

THD Summer Job

A 'Vital' Part of Education

Federico Stein, Peruvian graduate student at Texas A&M, takes a soil sample on IH 45 project near Buffalo, District 17.

Federico Stein, a young graduate engineer from Lima, Peru, started out one fine day in the Spring of 1966 on a vacation trip to Europe. He made it as far as Texas. And he's been here ever since.

A graduate of the National University of Engineering in Lima and son of a prominent Peruvian engineer-contractor, Fred Stein embarked on the journey following his stint in the army. While visiting his sister and brother-in-law in Houston, though, he decided to "invest" his vacation funds in graduate education. He discussed his idea with professors at Rice University, and they, on learning that his greatest interests were in soil mechanics and highway construction, referred him to Professor Spencer J. Buchanan at Texas A&M. Fred was convinced by A&M's excellent laboratory facilities and close ties with TTI and the Texas Highway Department.

Under Buchanan's tutelage, Stein has completed the work for his master's degree and is enrolled for further graduate work. "I was amazed to have found this kind of help and such a good friend as General Buchanan," says Fred. "I can't believe all the good things he has done for me."

One of those "good things" Buchanan did for Fred was to arrange a summer job with the Highway Department. After Fred had been at A&M for a year, he was offered a summer job in New York by a large engineering consulting firm. He called Buchanan to ask his advice, but Buchanan had something else in mind. He arranged with District Engineer Joe Hanover for Fred to work in the Buffalo residency during the summer, and Fred accepted that job with no hesitancy.

"He turned down the New York offer and went to Buffalo," Buchanan said, "because of the field experience he would gain under the competent resident engineer at Buffalo."

There was mild confusion when he wrote home that he was lucky enough to get a job in Buffalo for the summer. "We thought you wanted to stay in Texas," his family wrote.

Fred worked under Resident Engineer Leonard Brown and Chief Inspector Rudolph Pate in Buffalo. "I was happy to have met such nice people. They helped me a lot; they gave me an opportunity to work in several different aspects of construction so I would have a well-rounded knowledge of the Highway Department work."

"He is a very thorough, very competent young man," says Buchanan. "At the end of every work day in Buffalo, he'd go to his room and write up an extensive diary of what he did that day."

Buchanan praised the policy of the Highway Depart-

Stein checks bearing on a piling for a bridge project in Buffalo.

ment that allows foreign engineers to work for the Department.

"This gives them an excellent opportunity to learn about American engineering practices first hand," says Buchanan. "The president of Peru — Fernando Belaunde, who is by the way a University of Texas graduate in architecture — has specified highways as one of that country's major deficiencies. And this boy wants to help," he added. "The work Fred did for the Highway Department was a vital part of his education."

When asked if he would like to work for the Highway Department another summer, Fred said, "I'd like to go back to Buffalo." But Professor Buchanan shook his head, "No, he needs more difficult problems now, such as work on tunnels and dams."

Fred has visited several states and has traveled from the East to the West Coast. "Texas is another country inside the United States," is his opinion. "It is completely different. People here seem to be more friendly and helpful."

But there is much to be done in Peru, and Fred will return. He hopes to get his doctoral degree here, and does not know when he will be ready to go. That's up to General Buchanan," he said.

When he does return home, Fred looks forward to teaching engineering and to construction work. He may work again for his father, who heads a large construction firm and who was formerly a professor at the National University of Engineering, Chief Engineer of Peruvian Highways and in charge of housing projects in Peru for the United States' AID program.

"There is much to be done in my country, and I want to give the people there the benefit of my experiences in the United States," Fred says. "But I'd like to stay in Texas, too; I shall miss all my good Texas friends." ■

To and From Our Readers

Ahead of Schedule

On January 1, all toll roads onto Texas' national seashore, Padre Island, were removed . . . five years ahead of the predicted removal date. The Texas Highway Department now is responsible for all county roads on Padre and Mustang Islands, as well as the Port Aransas Ferry system.

We Aim to Please

Mrs. Haskell Ferguson, a transplanted Okie living in Ore City, Texas, wrote a column recently for a newspaper in Tulsa, Oklahoma:

"One thing that makes roads down here attractive, whatever the season, is that the highway department doesn't denude the right of way of every tree that grows. There are beautiful large trees along almost every highway, US, state, or farm to market road. It sure makes for less monotonous driving.

"In addition to building and maintaining roads, we found that the Texas Highway Department performs other duties, which seemed strange to displaced Okies. We were told that, if properly requested, they would erect and paint our rural mailbox.

"However, since my hubby has always been his own handyman, it seemed easier for him to install our own mailbox Friday. The next Monday he heard a commotion and found Highway Department workers removing his mailbox and redoing the job to suit themselves."

(Editor's Note: Mrs. Ferguson said it was a "pleasant surprise.")

Former DE Takes New Post

Ed Bluestein, former Austin area district engineer, has been named engineer-manager for the Texas Lime division of the National Lime Association.

The Texas lime producer members of the NLA have recently organized a Texas division of the national association, with an office at 807 Brazos in Austin.

Bluestein's activities are being confined to soil stabilization uses of hydrated lime, particularly highways.

After Bluestein's retirement with a 41-year Departmental tenure in 1966, he went to work for Trinity Engineering Testing Corporation. His new position began on January 1.

Reappointed

A retired Texas Highway Department engineer, George W. Garrett of Winters, has been reappointed to the Defense Reserve, Department of Transportation. Garrett has served on the BPR post for about 12 years. Before retirement, Garrett had been with the Highway Department for more than 31 years.

Big Tex

A newsletter published by the American Road Builders' Association carries a plug for the 50th anniversary issue of *Texas Highways* published in September by Travel and Information Division. The ARBA release calls the special edition a "fantastic big-Texas type publication."

"I'VE BEEN WITH THIS OUTFIT LONG ENOUGH TO KNOW I WON'T HESITATE IF OPPORTUNITY KNOCKS."

TEXAS HIGHWAY COMMISSION

HAL WOODWARD — Chairman
HERBERT C. PETRY, JR. — Member
J. H. KULTGEN — Member
J. C. DINGWALL — State Highway Engineer

Texas Highways

TEXAS HIGHWAYS, official journal of the Texas Highway Department, is published in the interest of highway development in Texas and for departmental education in construction, maintenance, and operation.

TEXAS HIGHWAYS is available to the general public on a subscription basis at $4.50 annually, or it can be purchased for 40 cents a copy. Subscriptions, inquiries, material, or manuscripts should be directed to the Editorial Office, Travel and Information Division, Texas Highway Department, Austin, Texas 78701 •

"GIG 'EM AGGIES." It's been a long, long time. Looking joyous about seeing the Main Building post repainted maroon and white — the first time in many years — are, from left, Roger Spencer, Maintenance Operations Division; Ed Carl, Highway Design Division; and Jim O'Connell, District 17. The post is repainted in appropriate colors by Grover Martin immediately after the Texas-Texas A&M football game.

Sound Familiar?

Here are 28 good ways to avoid a decision. How many have you heard?

1. We tried that before. 2. We've never done it before. 3. I know a fellow who tried it. 4. We've always done it this way. 5. It's too radical a change. 6. Why change it? It still works okay. 7. We did all right without it. 8. It's too much trouble to change. 9. Our place is different. 10. We lack authority to change. 11. Top management wouldn't go for it. 12. The men will never buy it. 13. The public won't like it. 14. We don't have the time. 15. Not enough help. 16. It costs too much. 17. It isn't in the budget. 18. We're not ready for that. 19. Let's put it in writing. 20. We should test it first. 21. A committee should test it. 22. Let's give it more thought. 23. Let's all sleep on it. 24. Shelve it for the time being. 25. You're right, but . . . 26. Good thought, but impractical. 27. It can't be done. 28. It's impossible.

One More Time

Change has its advantages, claim five Dallas-area wives who have a combined 50 moves to their credit. Reports the Dallas Times Herald, the record holder of the five is Mrs. Pauline DeBerry, wife of B. L. DeBerry, district engineer in District 18.

In late December the DeBerrys made their 29th move, from Dallas to Austin, where he became assistant state highway engineer.

"After this many moves, what's one more?" shrugged Mrs. DeBerry. "Before we were married, he warned me that we would probably move a great deal. Each time we do, he says, 'Remember, I told you it would be like this.' "

He's Flexible

Early one fall morning, District Engineer Joe Hanover left the district office in Bryan for an inspection trip throughout his district. Later that same day Construction Engineer John Blasienz left the Bryan office in a different direction, to check construction projects under way.

The two men had no idea of the other's plans for the day. Fate drew them together, however, late that afternoon when they met on a collision course in the middle of a half-mile, narrow cut-off trail near construction of Interstate 45. Hanover was heading toward IH 45, and Blasienz was coming from it.

The trail was wide enough for only one vehicle; passing was impossible. So Mr. Hanover backed up — all the way to the highway.

Asked why he had backed up instead of having Blasienz do so, Hanover answered, "I'm flexible, I guess."

More for the 50th

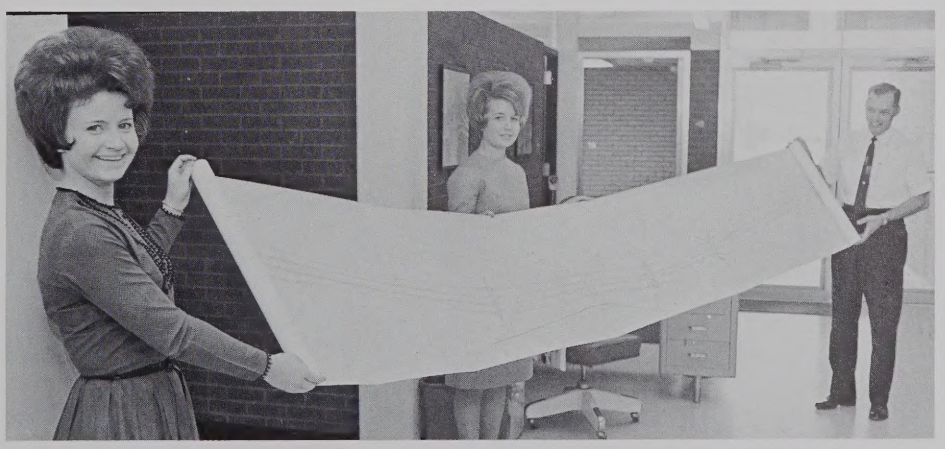
Bill Alderman, editor of *Texas Parade* magazine, writes:

"The Fiftieth Anniversary edition of TEXAS HIGHWAYS is one of the finest things the Highway Department has ever published. The only possible criticism is due entirely to limitation of space. It could have been several times as thick and still lacked room for vital material.

"I am sure you are preserving the material which you had to leave out. This will form a valuable reference source for future use by any who would study the fascinating development of our highway system.

"Too much of this colorful history was lost when road builders of an earlier day died without documenting the things they experienced or knew for the benefit of future generations.

"My very belated congratulations to you for a tremendous job, fully worthy of the Department's finest traditions."



A LENGTHY PROBLEM—Unrolling part of almost 40 feet of preliminary drawings on the Kell Freeway construction project in Wichita Falls are, from left, Sue Willis, Linda Rhoades, and Bill Dickenson. More detailed plans for the District 3 project will be ready soon.

OVER THE HIGHWAYS

Comments . . . from the Traveling Public

• I made a trip to Lake O' the Pines. I toured the area of Jefferson and Marshall where the highway is under construction. It was night when I drove over the road which had been treated with asphalt and had not been covered. I was in a white station wagon, and when I arrived at Marshall the next day, the asphalt was literally dripping from the car. I was quite concerned since the car belonged to a woman in my party of six women.

I drove to the Marshall Highway Office to get information about cleaning the car. I was cordially treated by the secretary at the office who quickly called the shop foreman and told him my problem. He advised her to send me to the shop where they spent an hour cleaning the car.

I wanted to take this opportunity to tell you how much I appreciate the service given me at the Marshall Highway Office. Their courtesy and efficiency will not soon be forgotten.

Mrs. Wilma Green
Fort Worth

• I wanted to write and let you know what a good job I think the state of Texas is doing. We just returned from a trip to Padre Island. On the way down we stopped for a picnic lunch on Interstate 35 right out of Georgetown. I am really impressed with the rest areas and picnic facilities you and your staff are offering the people of our state as well as visitors.

On the trip home we stopped on Highway 123 right before you get to San Marcos. This sight was as nice, yet even lovelier than the first. I wish to thank you for all the work you have been doing. I do not mind paying taxes for something that I can see and the good results that my money is helping contribute to. Keep up the good work.

Mrs. James W. Carney
Fort Worth

• We are studying about your state in our Social Studies class. We would appreciate it if you would send us some colorful information about Texas. We are making a scrapbook about all of our 50 states. Thank you very much for your help.

Gary Comes At Night
Mrs. Morissette's Class
Heart Butte, Montana

• Quite a few of my business trips by automobile include the state of Texas. When my wife accompanies me we enjoy our lunches in your roadside rest areas. I would appreciate it if you would tell me what your roadside maintenance department uses to put the gay glass-like finish atop your concrete picnic tables and benches.

H. A. Woodin
Des Plaines, Illinois

• I only know his name as Williams from Donna. I know I was glad to see him, a total stranger to me, on November 13. I had attended a burned child and was homeward bound to La Feria on US 83. I was driving my wife's station wagon which choked a couple of times and ran out of gas. It was about 10 p.m., and as usually happens, I was fairly remote from any communication. It was not a serious situation, but decidedly aggravating.

I turned on my emergency blinker lights, locked my medical bag in the car, and prepared to set about on foot to solve the problem. It was then that I noticed headlights in the eastbound lane making a complete U-turn to see if I needed assistance.

Within five minutes, Mr. Williams had replenished my station wagon with sustenance for the journey to La Feria. Needless to say, I was mighty grateful, and cheerfully reached into my billfold to replenish this fellow's act of courtesy and replace the gasoline given at his expense.

I think the whole point of this letter comes in his reply, "Oh, no sir, I work for the Highway Department, and this just comes natural for me!" From that moment, the Texas Highway Department meant just a little more to me and Mr. Williams reflected a great deal of pride in his role as a member of your team. A small courtesy, true, but one that shows the special mark of dedicated people who, after all, are the heart of any organization.

Dr. John A. Ferris Jr.
La Feria

• Thank you for your superior roadside and park facilities. Orange County was our first sight of your beautiful state. The information bureau there was most helpful and gracious. The free materials were not only lovely, but most informative.

We had not expected to spend any time in Texas, as we had expected a flat dry state. To our pleasant surprise we found East Texas, and spent two lovely weeks touring and exploring.

There are few states that can boast finer roads. The wild flowers bordering your highways were a joy to the eye. If we ever leave our home in Philadelphia, Houston will be our new home.

Walter and Joyce Whitehead
Philadelphia, Pennsylvania

• I would like to inform you about a hazardous highway condition. Three miles south of Carthage on Highway 59, there are sharp curves and bridges on Six Mile Creek.

There have been several accidents involving serious injuries and deaths. The most recent one occurred at 3 a.m. A mother was killed and her two children injured.

Please investigate condition of this road at said location.

Mrs. Travis Cranford
Carthage

Gone Are the Days—In the late Twenties a small girl could stand on this one-lane timber bridge on the Arroyo Colorado near Rio Hondo without much chance of being hit by a car chugging down the rough dirt road leading to it. The bridge and road were taken into the Highway Department system as part of FM 106. In 1953 the Department completed a 145-foot, vertical lift span (below) for the convenience of water traffic and for highway safety. The lift span is the only bridge of its kind in Texas.

Located just a stone's throw from the Highway Department's famed Spaghetti Bowl near downtown Houston, the Jesse H. Jones Hall for the Performing Arts is the new permanent home for the Houston Symphony Orchestra. The $6,650,000 structure was erected on the same site where the old city auditorium once stood. Photograph by Herman Kelly.